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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/961,119	09/20/2001	Kent W. Carey	10004333-1	4191

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EXAMINER	
NGUYEN, CHAU M	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 09/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/961,119	CAREY, KENT W.	
	Examiner	Art Unit	
	Chau M Nguyen	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 September 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 4, 6 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4 and 6, depended on claim 1, recite the limitation "the receiving". There is insufficient antecedent basis for this limitation in the claim.

4. Claim 10 provides for the use of "... the receiving comprises receiving the optical signal within the optical modulator comprising a filter...", but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Also claim 10, as appeared, it claims **both** an apparatus and method steps of using the apparatus is indefinite under 35 U.S.C. 112, second paragraph and 35 U.S.C 101. In Ex parte Lyell, 17 USPQ2d 1548 (Bd. Pat. App. & Inter. 1990). See MPEP 2173.05(p), Section II.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1,7, 19 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Koren et al. (Hereinafter "Koren") (U.S. Pat. No. 5,861,965).

As claims 1 and 19, Koren discloses a method and optical communication system comprising:

a plurality of optical modulators (26a, 26b..., fig. 3, col. 6, lines 58-60) adapted to optically couple with an optical signal and an optical communication medium, and wherein individual ones of the optical modulators are configured to:

receive a data signal (through element 22, col. 6, lines 1-5) ;

pass a desired portion of the optical signal having at least one predefined wavelength (col. 6, lines 9-14);

optically modulate the desired portion of the optical signal having the at least one predefined wavelength responsive to the data signal (col. 4, lines 23-31); and

output the desired portion of the optical signal after the modulation for application to the optical communication medium (col. 4, lines 44-46).

As claims 7 and 25, Koren discloses a coupler (divider) (numerical 40, fig. 3) for:

dividing the optical signal into the desired portions; and

providing the desired portions to the respective modulators (col. 6, lines 56-62).

7. Claims 1, 7, 8, 13-19 and 25- 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Knox et al. (Hereinafter "Knox") (U.S. Pat. No. 5,526,155).

As claims 1 and 19, Knox discloses a method and optical communication system comprising:

a plurality of optical modulators (27, fig. 2, col. 7, lines 5-7) adapted to optically couple with an optical signal and an optical communication medium, and wherein individual ones of the optical modulators are configured to:

receive a data signal (through element 28, col. 7, lines 10-15) ;

pass a desired portion of the optical signal having at least one predefined wavelength (see Abstract);

optically modulate the desired portion of the optical signal having the at least one predefined wavelength responsive to the data signal; and

output the desired portion of the optical signal after the modulation for application to the optical communication medium (col. 3, lines 48-67).

As claim 7 and 25, Knox discloses a splitter (divider) (numerical 18, fig. 2) for:

dividing the optical signal into the desired portions; and

providing the desired portions to the respective modulators (col. 6, lines 53-56).

As claims 8 and 26, Knox discloses a combiner (18, fig. 2) configured to receive the desired portions of the optical signal from the optical modulators, to combine the desired portions (col. 7, lines 54-58), and to provide the desired portions to the optical communication medium comprising an optical fiber (34) after the combining of the desired portions (col. 7, lines 40-44).

As claims 13 and 27, Knox discloses a method and optical communication system comprising:

a light source (11, fig. 2, col. 6, lines 20-25) for providing a source-light beam;

an optical divider (18, col. 6, lines 54-56) for converting said source-light beam into plural carrier-light beams;

a modulator array (26, col. 7, lines 1-5) for converting said carrier-light beams into encoded-light beams, said modulator including means for receiving plural data signals (numerical 29, col. 7, lines 10-15), said modulator array converting each of said carrier-light beams into a respective one of said encoded-light beams as a function of a respective one of said data signals (col. 13, lines 64-67); and

an optical combiner (18, col. 7, lines 54-58) for combining said encoded-light beams to yield a multiplexed-light beam.

As claims 14-18 and 28-32, Knox (fig. 2), shows optical combiner (18) injecting or multiplexing said multiplexed-light beam into an optical communication channel (col. 7, lines 55-58), and each encoded beams having different wavelengths (col. 1, lines 28-30).

8. Claim 9 is rejected under 35 U.S.C. 102(e) as being anticipated by Roberts et al. (Hereinafter "Roberts") (U.S. Pat. No. 6,313,932 B1).

As claim 9, Roberts discloses a method of optical communication comprising:

providing an optical signal (by pulse source 1, fig. 1, col. 5, lines 3-7);

providing a data signal (by 11, col. 5, lines 11-13);

receiving the optical signal and the data signal within an optical modulator (5);

encoding the data signal upon at least a portion of the optical signal by optically modulating at least the portion of the optical signal using frequency modulation (col. 5, lines 11-13 and col. 9, lines 42-44); and

outputting at least the portion of the optical signal to an optical communication medium after the encoding (col. 5, lines 30-34).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 2-6, 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knox (U.S. Pat. No. 5,526,155) as applied to claims 1 and 19, in view of Roberts (U.S. Pat. No. 6,313,932 B1).

As claims 2 and 20, the method and optical communication system of Knox as described above, in that Knox does not specify the optical modulator to be configured to frequency modulate the desired portions of the optical signals. However, Roberts discloses the optical modulators to be configured to frequency modulate the designed portions of the optical signals (Roberts, col. 3, lines 37-40). Since these references relate to optical transmission, particularly, to an array modulator for modulating each carrier signal with data signals, therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to apply the frequency modulation configuration as taught by Roberts into the optical system of Knoxin order to frequency modulate the desired portions of the optical signals. One would have motivated for using frequency modulation since such modulation enables the entire frequency content of the pulse to be utilized for each channel (Roberts, col. 3, lines 41-46).

As claims 3-5 and 21-23, Roberts discloses array modulator as a filter for either passing, filtering portions of the optical signal having respective different wavelengths (col. 3, lines 33-45).

As claims 6 and 24, Roberts also discloses the optical modulator be able to receive substantially an entirely of the optical signal. (col. 4, lines 45-46).

11. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts (U.S. Pat. No. 6,313,932 B1) as applied to claim 9, in view of Wilner et al. (Hereinafter "Wilner") (U.S. Pat. No. 6,341,021 B1).

As claims 10-12, the method of optical communication as described in the rejection claim 9, in that Roberts discloses the encoding comprising frequency modulating at least the portion of the optical signal (col. 9, lines 38-44). Roberts does not clearly disclose the receiving step comprising receiving the optical signal within the optical modulator comprising a filter having a pass band. However, Wilner discloses the receiving step within the optical modulator comprising filter (OF1, ..., fig. 1A) having a pass band for selecting the optical signal within pass band for modulating and filtering the optical signal outside of the pass band using the optical modulator (col. 7, lines 20-37). Since both Roberts and Wilner systems relate to optical communication in utilities with array optical modulator, therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to incorporate a filtering (using filter) having a pass band as taught by Wilner into the process of receiving the optical signal within the optical modulator in order for selecting or filtering the designed portion of signal. One would have motivated for doing this since the outputs from filters provide the information to control the array modulator, in turn, to control each channel and to reduce power dissipation (Wilner, col. 2, lines 60-64).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Brosnan et al. (U.S. Pat. No. 6,366,356 B1) is cited to show high average power fiber laser system with high-speed, parallel wavefront sensor.

Bishop et al. (U.S. Pat. No. 5,936,752) is cited to show WDM source for access applications.

Diels et al. (U.S. Pat. No. 6,421,154 B1) is cited to show apparatus and method for high bandwidth laser-based data communication.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chau M Nguyen whose telephone number is 571-272-3030. The examiner can normally be reached on Mon-Fri from 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.M.N.
Sept. 16, 2004

M. R. Sedighian

M. R. SEDIGHIAN
PRIMARY EXAMINER